PATENT

INSTITUT FRANÇAIS DU PETROLE

METHOD FOR MODELLING FLUID FLOWS

IN A FRACTURED MULTILAYER POROUS MEDIUM

AND CORRELATIVE INTERACTIONS IN A PRODUCTION WELL

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ABSTRACT

A method is disclosed for modelling fluid flows in a fractured multilayer porous medium by accounting for the real geometry of the fracture network and the local exchanges between the porous matrix and the fractures at each node of the network, thus allowing simulation of the interactions between the pressure and flow rate variations in a well running across the medium. The method essentially comprises discretizing the fractured medium by means of a mesh pattern, with fracture meshes centered on nodes at the various intersections of the fractures with each node being associated with a matrix volume, and determination of the flows between each fracture mesh and the associated matrix volume in a pseudosteady state. The method can be applied in hydrocarbon production well testing .